

FRA-RA

ENGINEERING CHANGE PROPOSAL (ECP), PAGE 1				1. DATE (YYYYMMDD)		Form Approved OMB No. 0704-0188	
<p>The public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p> <p>PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THIS ADDRESS. RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT/PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THIS FORM.</p>						2. PROCURING ACTIVITY NO. R2J2027	
						3. DODAAC	
						4. ORIGINATOR	
a. TYPED NAME (First, Middle Initial, Last) Jeff Ranu		b. ADDRESS (Street, City, State, Zip Code) U.S. Army TACOM-ARDEC AMSTA-AR-FSA-M Picatinny Arsenal, NJ 07806		5. CLASS OF ECP II		6. JUST. CODE D	
7. PRIORITY R		9. BASELINE AFFECTED		10. OTHER SYS./CONFIG. ITEMS AFFECTED			
8. ECP DESIGNATION		a. MODEL/TYPE 60mm Mortar		b. CAGE CODE 19200		c. SYSTEM DESIGNATION M888 60mm HE Cartridge	
d. ECP NO. R2J2027		e. TYPE		i. REV		FUNCTIONAL <input checked="" type="checkbox"/> PRODUCT ALLOCATED	
11. SPECIFICATIONS AFFECTED				12. DRAWINGS AFFECTED			
a. SYSTEM		CAGE Code		Specification/Document No.		Rev. SCN	
b. DEVELOPMENT							
c. PRODUCT							
13. TITLE OF CHANGE							
14. CONTRACT NO. AND LINE ITEM				15. PROCURING CONTRACTING OFFICER			
				a. NAME (First, Middle Initial, Last)			
				b. CODE		c. TELEPHONE NO.	
16. CONFIGURATION ITEM NOMENCLATURE				17. IN PRODUCTION		YES <input type="checkbox"/> NO <input type="checkbox"/>	
18. ALL LOWER LEVEL ITEMS AFFECTED							
a. NOMENCLATURE Cartridge, 60mm, HE M888 with M935 PD Fuze		b. PART NO.		c. NSN			
19. DESCRIPTION OF CHANGE Removal of Ozone Depleting Chemicals from M888 TDP. Replacement of Pettman Cement with Loctite 638 adhesive, currently in use with other 60mm HE cartridges. Replacement of felt pad used between fuze booster cup and booster, with Wool Felt, ASTM D2475, NO. 12R3X.							
20. NEED FOR CHANGE Specifications that list the use of Ozone Depleting Chemicals need to be replaced with alternatives that are more environmentally friendly.							
21. PRODUCTION EFFECTIVITY BY SERIAL NUMBER N/A				22. EFFECT ON PRODUCTION DELIVERY SCHEDULE N/A			
23. RETROFIT							
a. RECOMMENDED ITEM EFFECTIVITY				b. SHIP/VEHICLE CLASS AFFECTED			
c. ESTIMATED KIT DELIVERY SCHEDULE				d. LOCATIONS OR SHIP/VEHICLE NUMBERS AFFECTED			
24. ESTIMATED COSTS/SAVINGS UNDER CONTRACT				25. ESTIMATED NET TOTAL COSTS/SAVINGS			
26. SUBMITTING ACTIVITY				b. TITLE			
a. AUTHORIZED SIGNATURE Jeff Ranu				Mechanical Engineer			
27. APPROVAL/DISAPPROVAL							
a. CLASS I		b. CLASS II		c. CLASS II		DO NOT CONCUR IN CLASSIFICATION OF CHANGE	
APPROVAL RECOMMENDED <input type="checkbox"/>		DISAPPROVAL RECOMMENDED <input type="checkbox"/>		APPROVED <input checked="" type="checkbox"/>		CONCUR IN CLASSIFICATION OF CHANGE <input checked="" type="checkbox"/>	
d. GOVERNMENT ACTIVITY		SIGNATURE		DATE SIGNED (YYYYMMDD)			
AMSTA-AR-FSA-M		HENRY TRANDER		2003 01 09			
g. APPROVAL		h. GOVERNMENT ACTIVITY		i. SIGNATURE		DATE SIGNED (YYYYMMDD)	
APPROVED <input checked="" type="checkbox"/>		TACOM-ARDEC, AMSTA-AR-FSA-M		ARTHUR J. HEYDERMAN		2003 02 06	
DISAPPROVED <input type="checkbox"/>				Chief, FSAC Prod & Log Eng Spt Team			

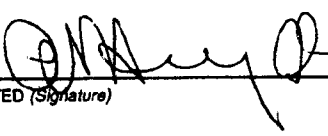
1-15-02
16 JAN 2003

DD FORM 1692, AUG 96 (EG)

PREVIOUS EDITION MAY BE USED.

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Stmnt C. Govt & Contractors, controlling DOD office: AMSTA-AR-FSA-M

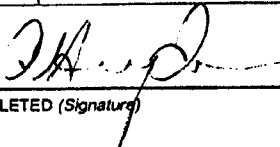
NOTICE OF REVISION (NOR) THIS REVISION DESCRIBED BELOW HAS BEEN AUTHORIZED FOR THE DOCUMENT LISTED		1. DATE (YYYYMMDD)	Form Approved OMB No. 0704-0188
<small>The public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</small> PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THIS ADDRESS. RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT/PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THIS FORM.		2. PROCURING ACTIVITY NO. R2J2027	3. DODAAC
4. ORIGINATOR a. TYPED NAME (First, Middle Initial, Last) Jeff Ranu	b. ADDRESS (Street, City, State, Zip Code) U.S. Army TACOM-ARDEC AMSTA-AR-FSA-M Picatinny Arsenal, NJ 07806	5. CAGE CODE 19203 7. CAGE CODE 19203	6. NOR NO. 1 of 3 8. DOCUMENT NO. 9255259
9. TITLE OF DOCUMENT Pad	10. REVISION LETTER a. CURRENT A b. NEW B		11. ECP NO. R2J2027
12. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES Cartridge, 60mm, HE M888- M935 PD Fuze			
13. DESCRIPTION OF REVISION Zone B4: Change: From: 2- Material:- Felt, Pressed Sheet, Type I, Class 12R3, Spec C-F-206. To: 2- Material - Wool Felt, ASTM D2475, NO.12R3X Zone B2: Add: Distribution Statement A			
14. THIS SECTION FOR GOVERNMENT USE ONLY			
a. (X one)	<input checked="" type="checkbox"/> (1) Existing document supplemented by this NOR may be used in manufacture. <input type="checkbox"/> (2) Revised document must be received before manufacturer may incorporate this change. <input type="checkbox"/> (3) Custodian of master document shall make above revision and furnish revised document.		
b. ACTIVITY AUTHORIZED TO APPROVE CHANGE FOR GOVERNMENT TACOM-ARDEC, AMSTA-AR-FSA-M		c. TYPED NAME (First, Middle Initial, Last)	
d. TITLE ARTHUR J. HEYDERMAN Chief, FSAC Prod & Log Eng Spt Team	e. SIGNATURE 		f. DATE SIGNED (YYYYMMDD) 2003 0206
15.a. ACTIVITY ACCOMPLISHING REVISION		b. REVISION COMPLETED (Signature)	c. DATE SIGNED (YYYYMMDD)

DD FORM 1695, AUG 96 (EG)

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Smt C. Govt & Contractor, controlling DOD c200: AMSTA-AR-FSA-R

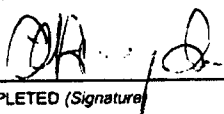
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			3. DODAAC
4. ORIGINATOR a. TYPED NAME (First, Middle Initial, Last) Jeff Ranu		b. ADDRESS (Street, City, State, Zip Code) U.S. Army TACOM-ARDEC AMSTA-AR-FSA-M Picatinny Arsenal, NJ 07806	5. CAGE CODE 19200 7. CAGE CODE 19200
9. TITLE OF DOCUMENT Cartridge, 60mm, HE, M888 w/Fuze, M935		10. REVISION LETTER a. CURRENT K b. NEW J	
11. ECP NO. R2J2027		12. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES Cartridge, 60mm, HE M888	
13. DESCRIPTION OF REVISION Zone H8: Change: <p>From: 2- COAT THREADS OF M935 FUZE OR MATING THREADS OF M888 PROJECTILE BODY WITH CEMENT, PETTMAN, TYPE A, SPEC JAN-C-99 (NOTE5) AND ASSEMBLE WITH 275 TO 350 IN LBS. ASSEMBLY TORQUE. QUANTITY OF PETTMAN CEMENT APPLIED TO THREADS MUST BE SUFFICIENT TO INSURE A MINIMUM COVERAGE OF ONE HALF THE THREAD AREA FOR A FULL 360°</p> <p>TO: 2 - COAT THREADS OF M935 FUZE OR MATING THREADS OF M888 PROJECTILE BODY WITH ADHESIVE, LOCTITE 638 (12993643) AND ASSEMBLE WITH 100 to 150 ^{275 to 350} IN LBS TORQUE BEFORE ADHESIVE HAS FULLY CURED. QUANTITY OF ADHESIVE APPLIED TO THREADS MUST BE SUFFICIENT TO INSURE A MINIMUM COVERAGE OF ONE HALF THE MATING THREAD AREA FOR A FULL 360°</p> <p>From: 3- Coat threads of M27 fin or the mating threads of M888 with cement ³⁵⁰, pettman, Type A, Spec JAN-C-99 (Note 5) and Assemble while wet with 275 to 350 in lbs assembly torque. Quantity of Pettman Cement Applied to threads must be sufficient to ensure a minimum coverage of one half the thread area for a full 360 degrees.</p> <p>To: 3- Apply Adhesive, Loctite 638 (12993543), to threads of projectile body loading assembly (9236378). Assemble M27 fin (11751196) to projectile body loading assembly with 100 to 150 ^{275 to 350} inch-lbs torque before adhesive has fully cured. Do not apply force to fin cant area when assembling fin to body. Fin must be fully seated on projectile body. Quantity of Loctite Applied to Threads Must be Sufficient to Ensure a Minimum Coverage of One-Half the Thread Area for a Full 360 degrees.</p>			
14. THIS SECTION FOR GOVERNMENT USE ONLY			
a. (X one) <input checked="" type="checkbox"/> (1) Existing document supplemented by this NOR may be used in manufacture. <input type="checkbox"/> (2) Revised document must be received before manufacturer may incorporate this change. <input type="checkbox"/> (3) Custodian of master document shall make above revision and furnish revised document.			
b. ACTIVITY AUTHORIZED TO APPROVE CHANGE FOR GOVERNMENT TACOM-ARDEC, AMSTA-AR-FSA-M		c. TYPED NAME (First, Middle Initial, Last)	
d. TITLE ARTHUR J. HEYDERMAN Chief, FSAC Prod & Log Eng Spt Team		e. SIGNATURE 	
f. DATE SIGNED (YYYYMMDD) 2003-02-05		g. DATE SIGNED (YYYYMMDD)	
15.a. ACTIVITY ACCOMPLISHING REVISION		b. REVISION COMPLETED (Signature)	

DD FORM 1695, AUG 96 (EG)

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		7. CAGE CODE 19200	8. DOCUMENT NO. 9354430
9. TITLE OF DOCUMENT Cartridge, 60mm, HE, M888 w/Fuze, M935	10. REVISION LETTER a. CURRENT K		11. ECP NO. R2J2027
12. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES Cartridge, 60mm. HE M888			
13. DESCRIPTION OF REVISION ZONE G8: CHANGE: FROM: 4- COAT THREADS OF M702 IGNITION CARTRIDGE OR THE MATING THREADS OF FIN M27, WITH CEMENT, PETTMAN TYPE A, SPEC JAN-C-99 (NOTE 5) AND ASEMBLE WHILE WET WITH 50 TO 75 IN LBS ASSEMBLY TORQUE. QUANTITY OF PETTMAN CEMENT APPLIED TO THREADS MUST BE SUFFICIENT TO INSURE A MINIMUM COVERAGE OF ONE HALF THE THREAD AREA FOR A FULL 360 . TO: 4- APPLY ADHESIVE, LOCTITE 638 (12993643) TO THE THREADS OF M702 IGNITION CARTRIDGE OR THE MATING THREADS OF FIN M27, AND ASEMBLE WITH 100 +/- 5 IN LBS ASSEMBLY TORQUE BEFORE ADHESIVE HAS CURED. HEAD OF IGNITION CARTRIDGE MUST BE FULLY SEATED ON FIN, AND MUST NOT BE CLOSER THAN 0.075 INCH TO REAR OF FIN BLADES AFTER ASSEMBLY. QUANTITY OF LOCTITE ADHESIVE APPLIED MUST BE SUFFICIENT TO INSURE A MINIMUM COVERAGE OF ONE-HALF THE THREAD AREA FOR A FULL 360 DEGREES. FROM: 5- ALTERNATIVE MATERIAL:- SHELLAC, CUT, TYPE II, GRADE B, BODY I, SPEC TT-5-300 90% BY VOLUME AND GRAPHITE GRADE I, SPEC MIL-G-155, 10% BY VOLUME. TO: DELETE NOTE 5			
14. THIS SECTION FOR GOVERNMENT USE ONLY			
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d. TITLE ARTHUR J. HEYDERMAN Chief, FSAC Prod & Log Eng Spt Team	e. SIGNATURE 	f. DATE SIGNED (YYYYMMDD) 20030106	
15.a. ACTIVITY ACCOMPLISHING REVISION	b. REVISION COMPLETED (Signature)	c. DATE SIGNED (YYYYMMDD)	

DD FORM 1695, AUG 96 (EG)

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Stmt C, Govt & Contractors, controlling DOD office: AMSTA-AR-FSA-M

AMSTA-AR-AEE -WECAC
Compatibility Study Report, Analytical Research & Services

DATE August 15, 2002

REPORT NO. EWD- 31 -02/C

CUSTOMER

Requester: J.Ranu
Charge No.:
Requirement: Compatibility Study of Composition B, with Loctite 638
Retaining Compound Co Cured with Loctite 7649 Primer

TEST

Test Performed: Vacuum Compatibility at 100 ° C for 40 hours
Method: Mil-Std 286-C, Method 408.1.1

DATD

Component/Computation	ml gas at STP
Component 1 Composition B	0.38
Component 2 Loctite 638 with 7649 Primer cured	0.52
Control (1 + 2)	0.90
Mixture (1+ 2) Composition B / Loctite 638 / 7649 Primer	0.63
Mixture - Control	-0.27

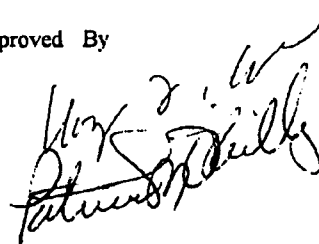
CONCLUSION

- (x) Compatible
() Marginaly Compatible
() Incompatible

Work By

Keith Rowe

Approved By



AMSTA-AR-AEE -WECAC
Compatibility Study Report, Analytical Research & Services

DATE August 15, 2002

REPORT NO. EWD- 34 -02/C

CUSTOMER

Requester: J.Ranu
Charge No.:
Requirement: Compatibility Study of M10 Propellant, Lot. 71051 with Loctite
638 Retaining Compound Co Cured with Loctite 7649 Primer

TEST

Test Performed: Vacuum Compatibility at 100 ° C for 40 hours
Method: Mil-Std 286-C, Method 408.1.1

DATD

Component/Computation	ml gas at STP
Component 1 M10 Propellant Lot. No. 71051	0.23
Component 2 Loctite 638 with 7649 Primer cured	0.52
Control (1 + 2)	0.75
Mixture (1+ 2) M10 Propellant / Loctite 638 / 7649 Primer	0.57
Mixture - Control	-0.18

CONCLUSION

- (x) Compatible
() Marginally Compatible
() Incompatible

Work By

Keith Rowe

Approved By

W. J. Rowe
John M. Kelly